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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/826,596	Applicant(s) ZIMMER, MARK	
	Examiner Mia M. Thomas	Art Unit 2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 January 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *25 January 2008* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. This Office Action is responsive to the applicant's remarks received on 25 January 2008. Claims 1-16 are pending and were rejected. Claim 16 was objected to. Claims 11-16 are amended herein. Claims 1-16 remain pending.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims **1, 2, 5, 9-12, 15,16** are rejected under 35 U.S.C. 103(a) as being unpatentable over Cok (US 5,710,839).

Regarding Claim 1:

Cok discloses a method of applying a blur to an image ("FIG. 2 depicts the steps of the process of the present invention…at column 2, line 31; Specifically, "Once all the regions that need to be obscured within the image 12 are designated, an obscuration process 24 using the region designation 22 and a kernel 26 automatically performs the obscuration…" at column 3, line 12),

the method comprising the steps of: defining a primary kernel (Refer to Figure 2, numeral 44) to compute an output pixel as a weighted average of a plurality of pixels (Refer to Figure 2, numeral 62) of the image wherein a spatial relationship between the output pixel and the plurality of pixels is determined by a step size of the primary kernel; (Following the process of Figure 1, numeral 26, "automatically performs the obscuration using a conventional convolution technique in which the kernel is iteratively applied from the outside to the center to obscure the details in the image 12 in the region of interest." at column 3, line 15; Additionally, refer to Figures 5a-5d);

applying the primary kernel (Refer to Figure 21, numeral 112) to each pixel of the image to produce an intermediate result ("The process applies 44 the kernel to the data which can be a conventional convolution operation or a specialized operation that takes account of the characteristics of the kernels...." at column 4, line 25 producing Figure 1, numeral 46);

increasing the step size of the primary kernel to create a higher order primary kernel and applying the higher order primary kernel to the intermediate result to produce a result image ("Each level is processed before the next, although some computations may be performed concurrently... The results are stored 46 in the original matrix and the kernel is moved 48 by incrementing the pointers." at column 4, line 20).

Although Cok does not specifically disclose that the computation of the spatial relationship between the output pixel and the plurality of pixels is determined by the step size of the primary kernel, it is made obvious that "The shape of the region, including the use of a primary kernel and or step size used for processing can be arbitrary as long as it is a closed curve as

described and the kernels of Figure 17 and 18 are alternative examples. Cok does however disclose by way of example that the pixels of the primary kernel are spatially related and thus aid in the determination of the step size of each kernel as "arbitrarily" disclose at Cok.

Additionally, “The present invention has been described with respect to a particular processing step order of sequentially marching around the region of interest…It is of course possible that other approaches can be take such as processing in parallel all at one by testing non-zero kernel element pixels for completeness or the like.” at column 10, lines 9-22. While Figure(s) 5a-5d illustrates exemplary kernels, any step size, as suggested by Cok, a simple substitution for one of the known primary kernels or step sizes, for an equivalent application of kernels or step sizes can be used to improve the blur computation as suggested. At the time the invention was made, this would have been obvious to one of ordinary skill in the art to substitute the steps as disclosed by Cok with the specified claimed elements to obtain the claimed features of Claim 1 because the determination of a step size of a kernel is a particular known technique that is recognized as part of the ordinary capabilities of one skilled in the art.

Regarding Claim 11: Claim 11 has subject matter that equally resembles the subject matter of Claim 1. Accordingly, Claim 11 is rejected for the same reasons, rationale and motivation as listed above at claim 1.

Specifically, a machine-readable medium having embodied thereupon instructions executable by a machine to perform the [above] method steps (“The present invention as illustrated in FIG. 1 includes a camera 10 …which captures an image 12 of about 4 megabytes that includes features that are undesirable. Although a camera image source is shown the image source

could be other devices such as an image storage device like a compact disk. The image 12 once it is received is stored in a computer 14 … processor having matrix process accelerators, and used to drive a display 16." at column 2, line 66).

Regarding Claim 2: Cok discloses defining a secondary kernel to compute an output pixel as a weighted average of a plurality of pixels of the image wherein a spatial relationship between the output pixel and the plurality of pixels is determined by a step size of the secondary kernel and wherein the weighted average of the secondary kernel is different from the weighted average of the primary kernel; ("Each kernel is used on one of the four sides of the rectangular region of interest. Alternatively, the kernels can be considered as the same kernel but rotated when applied to each of the four sides. That is, each kernel is symmetric inside the kernel about a normal to the surface and each kernel is rotationally symmetric. That is, if the kernel is rotated and applied to the same data the same result will be produced. The four kernels are shown in FIGS. 5A-5D." at column 4, line 3).

applying the secondary kernel (Refer to Figure 21, numeral 120) to each pixel of the result image to produce a second intermediate result ("The process applies 44 the kernel to the data which can be a conventional convolution operation or a specialized operation that takes account of the characteristics of the kernels...." at column 4, line 25 producing Figure 1, numeral 46).

Although Cok does not specifically disclose defining a secondary kernel and applying the secondary kernel to each pixel of the result image to produce a second intermediate result, it is made obvious in Cok that "The shape of the region, including the use of a primary kernel and or step size used for processing can be arbitrary as long as it is a closed curve as described and

the kernels of Figure 17 and 18 are alternative examples. Additionally, "The present invention has been described with respect to a particular process step order of sequentially marching around the region of interest…It is of course possible that other approaches can be take such as processing in parallel all at one by testing non-zero kernel element pixels for completeness or the like." at column 10, lines 9-22. Figures 17 and 18 illustrate "exemplary" kernels, any step size, as suggested by Cok, a simple substitution for one of the known primary <u>or secondary</u> kernels or step sizes, for an equivalent application of kernels or step sizes can be used to improve the blur computation as suggested. At the time the invention was made, this would have also been obvious to one of ordinary skill in the art.

Regarding Claim 12: Claim 12 has subject matter that equally resembles the subject matter of claim 2. Accordingly, Claim 12 is rejected for the same reasons as listed above at Claim 2.

Regarding Claim 9: Cok discloses wherein the step size is computed proportional to a regular factor raised to a power determined by a current kernel application step number ("The features of the kernel which improve efficiency and image quality include: making all element values a power of two, so that only shifts (instead of multiplies) and adds are required; making the sum of the kernel elements a power of two…" at column 3, line 30).

Regarding Claim 15: Claim 15 has subject matter that equally resembles the subject matter of claim 9. Claim 15 is rejected for the same reasons as listed at Claim 9.

Regarding Claim 10: Cok discloses wherein the step size is horizontal in even subpasses and vertical in odd subpasses ("The final level shown in FIG. 10 will occur when the region of

interest is square and has an even number of pixels in each dimension. If the area is square but has an odd number of pixels in each dimension, the last level will contain a single pixel as shown in FIG. 11. (FIGS. 11 through 14 show only the last few levels of a larger region of interest.)" at column 5, line 26; "No multiply or divide operations need to be done, only shifts and adds. Tracking the location of the pixel arguments for the kernels is more work, but the total is much less than required for a conventional convolution, for example. In addition, the special cases FIGS. 11 through 12 only pertain to regions of interest with odd dimensions. If the regions of interest are restricted to even row or column sizes, the special cases do not obtain and further simplification can be achieved." at column 6, line 4).

Regarding Claim 16: Claim 16 has subject matter that equally resembles the subject matter of Claim 10. Accordingly, Claim 16 is rejected for the same reasons as listed at Claim 10.

Regarding Claim 5: Cok discloses wherein the step size is further increased to create a successively higher order primary kernel and the successively higher order primary kernel is applied to a previous intermediate result to produce a next intermediate result until a predetermined step size limit is reached ("The shape of the region used for processing can be arbitrary as long as it is a closed curve and the kernels of FIGS. 17 and 18 modified according to curve sharpness can be used to process the region. Thus, it is possible for the user to outline the area to be obscured using conventional drawing techniques and have only that limited region obscured." at column 10, line 9).

4. Claims **3, 4, 6-8, 13, 14** are rejected under 35 U.S.C. 103(a) as being unpatentable over Cok (US 5,710,839) in combination with Herf (US 6,925,210 B2).

Regarding Claims 3 and 13:

Cok discloses all the claim limitations of Claims 2 and 12 as cited above.

Cok does not specifically disclose determining a final result by interpolating between the result image and the second intermediate result.

Herf teaches determining a final result by interpolating between the result image and the second intermediate result (Following the flowchart of Figure 5, Figure 5, numeral 530 teaches the “generated final blurred image”; At Figure 5, numeral 501 through numeral 531, the process for determining a final result (Fig.5, numeral 530) by interpolation (Fig.5, numeral 510) between the result image and the second intermediate result (numeral 510) is described herein; ”Figure 5 is a flowchart depicting the generalized image blurring method of Figure 2…” at column 2, line 49).

Cok and Herf are combinable because they are in the same field of image processing, specifically blurring algorithms (low-pass filtering) (See title and abstract of each invention).

At the time that the invention was made, it would have been obvious to one of ordinary skill in the art to combine the teaching of Herf with the disclosure of Cok to obtain the specified claimed elements of Claims 3 and 13, respectively. By adding the determination of the final result by interpolation, as taught by Herf to the method applying a blur to an image as disclosed by Cok these teachings/disclosures show that there are combinable because “large blurs are too expensive to be implemented directly using accumulation buffer techniques” (Herf). When the user is allowed to transform the intermediate results the blurring method is more efficiently used throughout.

Regarding Claims 4 and 14:

Cok discloses all the claim limitations of Claims 2 and 11 as stated above.

Cok does not specifically disclose applying the secondary kernel to each pixel of the second intermediate result to produce a third intermediate result; and determining a final result by interpolating between the second intermediate result and the third intermediate result.

Herf teaches applying the secondary kernel to each pixel of the second intermediate result to produce a third intermediate result; and determining a final result by interpolating between the second intermediate result and the third intermediate result ("The image blurring method described above takes advantage of the ability of graphics hardware to do recursive rendering, and exploits this recursive rendering capability in a novel way to blur images in real-time, without a great deal of computational precision." at column 7, line 19).

Cok and Herf are combinable because they are in the same field of image processing, specifically blurring algorithms (low-pass filtering) (See title and abstract of each invention).

At the time that the invention was made, it would have been obvious to one of ordinary skill in the art to combine the teachings of Herf with the disclosure of Cok to obtain the specified claimed elements of Claims 4 and 14, respectively. By adding the application of applying [of] the secondary kernel to each pixel of the secondary intermediate result to produce the third intermediate result as taught by Herf to definitive computation of the output pixel as disclosed by Cok because "In graphics hardware, a conventional implementation of a box filter renders the original image translated multiple times, and then averages all of the translated images together

to produce a resulting, blurred image. These repeated operations traditionally use "accumulation buffer" hardware to perform the averaging. Accumulation buffers can be used to implement full-screen anti-aliasing techniques, soft shadows, and motion blur effects." (Herf).

At the time the invention was made, it would have also been an obvious substitution to define the secondary kernel by applying a secondary kernel to each intermediate result. This is an obvious improvement to the claimed blur algorithm.

Regarding Claim 6:

Herf teaches wherein the blur is a Gaussian blur computed by performing each step in a horizontal direction and in a vertical direction ("The motion blurs described above can be extended to generate a two-dimensional blur, which approximates the so-called "Gaussian blur." To do so, the blurring method 200 is first performed along a first axis. Then, the blurring method 200 is performed a second time, using the result of the first run, along a second axis that is perpendicular to first axis, exploiting the separability of the filter to do the work efficiently. This Gaussian blur approximation method 500 is depicted in flowchart form in FIG. 5." at column 5, line 24).

At the time that the invention was made, it would have been obvious to one of ordinary skill in the art to add a Gaussian blur as taught by Herf because "2D Gaussian blur operations are used in many image processing applications. The execution times of these operations can be rather long, especially where large kernels are involved. Gaussian blurs are separable into row

and column operations", which allows for robust computational efficiency. (Batchelor et al. "An Efficient algorithm for Gaussian Blur using finite state Machines").

Regarding Claim 7: Herf teaches wherein the blur is a blur selected from the group consisting of: a motion blur, a zoom blur, a radial blur, and a spatially dependent blur ("The generalized image blurring method 200 may be used to carry out various types of image blurs known in the art. For example, the method may be used to carry out a motion blur, a Box blur, a Gaussian blur, a Spin blur, and a Zoom blur, each of which will now be described separately." at column 4, line 1).

At the time that the invention was made, it would have been obvious to one of ordinary skill in the art to add a blur selected from the group consisting of: a motion blur, a zoom blur, a radial blur, and a spatially dependent blur as taught by Herf because "the above-described image blurring operations were, for consistency and ease of explanation, … the image blurring method described above takes advantage of the ability of graphics hardware to do recursive rendering, and exploits this recursive rendering capability in a novel way." (Herf).

Regarding Claim 8: Herf teaches wherein the steps are performed by a plurality of GPU fragment programs ("The graphics hardware device 108 may be any one of numerous devices known in the art including, but not limited to, the GeForce family of video hardware available from NVIDIA Corporation, the Radeon family of video hardware available from ATI Corporation, and a variety of graphics hardware available from Matrox, 3Dlabs, and SGI." at column 3, line 8).

At the time that the invention was made, it would have been obvious to one of ordinary skill in the art to add the steps that would be performed by a plurality of GPU fragment programs as taught by Herf because "Producers of motion video programs use a variety of special effects to produce a final product. A graphics editor performs the task of adding special effects to motion video segments using a graphics workstation. It would be advantageous to use a plurality of GPU fragment programs because "Feathering is a special effect that blurs one or more portions of a video image. Feathering often is used when creating a composite video image from a foreground image and a background image. The graphics editor feathers the border between the images thereby blending the images together to create an effect that the two images are truly one image. (Gonsalves et al)

Response to Arguments

5. Applicant's arguments, see page 5, with respect to Claim Objections (Claim 16) have been fully considered and are persuasive. The objection to claim 16 has been withdrawn.

6. Applicant's arguments, see page 5, with respect to Claim Rejections under 35 USC 101 have been fully considered and are persuasive. The rejection of claims 11-16 has been withdrawn.

Examiner's Response: Regarding 35 USC 101;

> The USPTO "Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility" (Official Gazette notice of 22 November 2005), Annex IV, reads as follows:
>
> > Descriptive material can be characterized as either "functional descriptive material" or "nonfunctional descriptive material." In this context, "functional descriptive material" consists of data structures and computer programs which impart functionality when employed as a computer component. (The definition of "data structure" is "a physical or logical relationship among data elements, designed to

support specific data manipulation functions." The New IEEE Standard Dictionary of Electrical and Electronics Terms 308 (5th ed. 1993).) "Nonfunctional descriptive material" includes but is not limited to music, literary works and a compilation or mere arrangement of data.

When functional descriptive material is recorded on some computer-readable medium it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized. Compare In re Lowry, 32 F.3d 1579, 1583-84, 32 USPQ2d 1031, 1035 (Fed. Cir. 1994) (claim to data structure stored on a computer readable medium that increases computer efficiency held statutory) and Warmerdam, 33 F.3d at 1360-61, 31 USPQ2d at 1759 (claim to computer having a specific data structure stored in memory held statutory product-by-process claim) with Warmerdam, 33 F.3d at 1361, 31 USPQ2d at 1760 (claim to a data structure per se held nonstatutory).

<u>In contrast, a claimed computer-readable medium encoded with a computer program is a computer element which defines structural and functional interrelationships between the computer program and the rest of the computer which permit the computer program's functionality to be realized, and is thus statutory. See Lowry, 32 F.3d at 1583-84, 32 USPQ2d at 1035.</u>

Claim(s) 11-16 were rejected under 35 U.S.C. 101 based upon the interim guidelines which are to be followed in agreement with the MPEP. The suggestion for amending the claims was to assume that the specification also defined statutory subject matter and the claims would be commensurate with the specification.

Response to Arguments

7. Applicant’s arguments filed 25 January 2008 have been fully considered and a complete response to those remarks is provided below.

<u>Summary of Remarks:</u>

8. Applicant's arguments with respect to the <u>Rejection of Claims 1-16 under 35 USC 103(a</u>) have been fully considered but they are not persuasive.

A. @ page 6, Examiner contends that this limitation is met by Cok at column 13, line 15 and figures 5a-5d. Applicant respectfully disagrees. Cok does not teach or suggest that the

spatial relationship between the output pixel and the plurality of pixels used in the computation is determined by the step size of the primary kernel.

Examiner's Response:

B. *Examiner respectfully disagrees.* As noted above at the rejection of Claim 1, at column 3, line 15, this method "automatically performs the obscuration using a conventional convolution technique in which the kernel is iteratively applied from the outside to the center to obscure the details in the image 12 in the region of interest."

The Examiner is stating that the region of interest is a assertion to the spatial relationship between the output pixels and the multiple other pixels. Additionally with reference to Figure 2, numeral 48, the spatial relationship between the output pixel and the plurality of pixels is further disclosed. "The process applies 44 the kernel to the data which can be conventional convolution operation for a specialized operation that takes account of the characteristics of the kernels as discussed below. The results are stored 46 in the original matrix and the kernel is moved 48 by incrementing the pointers. A spatial relationship is the distance between objects and in this instance, the distance between pixels. As quoted above, at column 4, line 25 and further at column 4, lines 34+; "When the last corner has been reached the corners may need to be processed. For clarity, the Examiner is stating that Cok does indeed disclose a "spatial relationship between the output pixel and the plurality of pixels used in the computation to determine the step size of the primary kernel. (Further refer to column 4, lines 1-67).

Summary of Remarks:

C. Applicant's arguments with respect to the Rejection of Claims 1-16 under 35 USC 103(a) have been fully considered but they are not persuasive.

A. @ page 6, Examiner contends that the third limitation is met by Cok at column 4, line 20. Neither this passage nor any other portion of Cok does not teach anything about increasing the step size of the primary kernel to produce a higher order kernel.

Examiner's Response:

D. *Examiner respectfully disagrees.* Although the applicant has stated that "the kernels can be considered as the same kernel but rotated when applied to each of the four sides", this application of the kernels can also meet the limitations of Claim 1. For clarity, the Examiner is stating that ("Each level is processed before the next, although some computations may be performed concurrently... The results are stored 46 in the original matrix and the kernel is moved 48 by incrementing the pointers." at column 4, line 20). "The shape of the region, including the use of a primary kernel and or step size used for processing can be arbitrary as long as it is a closed curve as described and the kernels of Figure 17 and 18 are alternative examples.

As previously mentioned, "The present invention has been described with respect to a particular process step order of sequentially marching around the region of interest using appropriate kernels, detecting when all pixels of a level have been processed and moving in a level until all pixels have been processed. It is of course possible that other approaches can be taken, such as processing in parallel all at once by testing non-zero kernel element pixels for completeness." at column 10, line 15.

Application of the “arbitrary” kernel step size of Cok would actually lead to an “output” pixel which has a specified relationship (spatial)” as described and detailed at Claim 1. To further explain the Examiner’s argument, “The results are stored 46 in the original matrix and the kernel is moved 48 by incrementing the pointers. A spatial relationship is the distance between objects and in this instance, the distance between pixels. As quoted above, at column 4, line 25 and further at column 4, lines 34+; "When the last corner has been reached the corners may need to be processed. For clarity, the Examiner is stating that Cok does indeed disclose a “spatial relationship between the output pixel and the plurality of pixels used in the computation to determine the step size of the primary kernel. (Further refer to column 4, lines 1-67).

As shown at Figures 17 and 18, the primary kernel can be modified to be obscured to the region of interest would be obscured and further processed.

Summary of Remarks:

E. @ page 8, Cok does not teach or suggest each limitation of Claim 1 and Examiner gives no reason why one of ordinary skill in the art would modify Cok to provide these missing limitations, Cok cannot render claim 1 obvious. Claims 2-10 depend from claim 1 and therefore incorporate the limitations of Claim 1. All pending claims are allowable for at least the reasons as set forth above with respect to claim 1.

Examiner’s Response:

F. *Examiner respectfully disagrees.* By way of this Office Action and the response to applicant’s arguments, the Examiner has shown that the limitations as disclosed/ taught by Cok and Herf are obvious over the applicant’s claimed invention. Claims 1-20 have been rejected as

being obvious and therefore all pending claims are not allowable for the reasons set forth by this Office Action.

Conclusion

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mia M. Thomas whose telephone number is (571)270-1583. The examiner can normally be reached on Monday-Thursday 8am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vikkram Bali can be reached on 571-272-7415. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Mia M Thomas/
Examiner, Art Unit 2624

/Vikkram Bali/

Supervisory Patent Examiner, Art Unit 2624